

## RUSSIA AS IT IS... VI.

## The Army and Navy.

(Continued.)

The maintenance of the army absorbs far more than half of the gross revenue of the Empire, notwithstanding the very small pay of officers as well as common soldiers. After various deductions made from the pay of the soldier, as for example: for the common purse called *arrest*, for blacking, whitening, etc. he finally receives less than six cents monthly in cash. His equipment consists in three shirts, two pairs of shoes, two pairs of trousers, one full dress uniform, one jacket and a long military overcoat. The pay of the officers through all the grades even to the highest, is proportionally as mean as that of the soldiers. A lieutenant in the infantry has not over 15 dollars a month, and so on. A General of brigade has not two thousand dollars yearly. The pay of the superior officers, that is of the Generals, is relieved in some way by extra emoluments, granted to them as a special favor, under the denomination of *rents* for a certain number of years, or as service money, etc. The pay of the officers of the guards and generally of those of the cavalry is a little superior to that of the infantry.

A Commissariat is at head of the general administration of the army. It is great a den of thieves as it to be found in the world. The present Emperor has tried with all his might, and many times, to purify this Augean stable, but always without effect. If one thief is kicked out and severely punished, his successor will follow, after a while, the same course. The evil is too deep, rooted in the whole government. It penetrates all branches of the administration, civil as well as military. As we have mentioned already in a preceding article, it is inherent and vital to the system. The Emperor is sometimes driven mad by new and successive discoveries of peculation, either committed by his nearest favorites, or at least sheltered by their influence. On one such occasion he said to his son and heir: *Sasha (a diminutive of Alexander) there are only two honest men in Russia: thou and I*. In this he was wrong. There are some few more even in the elevated circle by which he is surrounded. Thus Pashkevich, Count Rudoff, Prince Soutavoff, and a few more. The Emperor might find honest men, elsewhere, in a small number. But such men once put forward, the Emperor has not the character to back and support them firmly against the corrupt intrigues, who unanimously oppose such unwelcome apparitions on their horizon.

The organization of the second division in the Commissariat is so extensive, so intricate, and so well combined, that no sword of justice or that of the autocrat can penetrate or cut it through. In this general order, next to the Commissariat, come the colonels commanding and administering the respective regiments. Their position is generally christened with the name of *shereff* *blagovremennyy*, economy. It is applied to all the necessities of the poor soldier. Thus the colonel for example, receives yearly the cloth for the equipment of the regiment, but the soldiers often wear the same uniforms for two years. The workmen in the regiment are all soldiers: their tailors, shoemakers, saddlers, smiths, &c., must work without any extra pay being allowed by the Colonel. In time of peace the regiment rarely contains a full number of soldiers, notwithstanding that the pay and equipment are received for full ranks. A Colonel shares a part of these "economies" with his general's or at least their staff. In the cavalry, very naturally, such "economies" are more considerable. First are those made on the incomplete number of men and horses; then "economy" made on the price of the horses, on that of the cost of their maintenance, for all of which high figures are paid by the Government to the Colonels, who make in this manner immense profits. Further, every year a certain number of horses is reported to be renewed, always more than are really necessary, and the Colonel pockets the money instead of buying the required number. Generally the yearly income economized in this way by a Colonel of cavalry will amount to twenty thousand, that of a Colonel of infantry from ten to twelve thousand dollars. To give an idea how these various "economies" are executed let us suppose the following: A sole for the shoe of a soldier as allotted by the Government is of 15 inches length. Before it reaches its destination the Commissariat and the Colonel clip it each in their turn to that extent that it becomes in fact scarcely 6 inches long. The same is done with flour and greases, in which consists the almost exclusive nourishment of the soldier. If he should have a pound for example, of each of them, he receives scarcely 8 ounces. The soldiers being generally quartered in towns and villages, have the right to claim from their hosts a seasoning of salt and grease. On the flour and greases the Captain of the company, as well as the senior Sergeant realize in turn their profits.

This general shrewd economy is to a certain extent sanctioned by the Government. Out of it the musical band of a regiment is understood to be maintained by the Colonel, as well as small extras. The maintenance of the musical band consists in the pay of a good director and music master, and in the purchase of instruments—the rest of the band are the soldiers of the regiment, made by force to become musicians.

The same principle of peculation extends to the Navy Yards, and above all becomes very lucrative for the officers superintending the construction of forts, and works. Thus the citadel of Warsaw, the forts of Georgia, viz. Modlin, Wyszegrodin Poland, that of Danzig in Lithuania, on the Dniepr, a special part of the present Emperor, but which never will be finished, like Pashkevich's, all these constructions, naval or inland, as well as those of the lines of telegraphs (not magnetic but according to the ancient system) have cost the Government tenfold more than their worth. Millions of millions thus lie in the hands of the myriads of constructors, engineers, officers, inferior as well as superior, directing and superintending the like extensive works.

Among all these birds of prey there appear from time to time exceptions—honest men—but they are rare and few, and in the long run are generally brow-beaten by the others. In justice to the Prince Pashkevich, it ought to be said, that his whole career, from the inferior grades to the present prominent one, has been marked by unblemished honesty. He made no fortune whatever as a Colonel. Now he is immensely rich, by the gifts of the Sovereign. But he, the all-powerful commander, is powerless to stop peculation in the army under his command. As says the old proverb: *no Hercules contra plures*. During a war, however, Pashkevich always takes particular care of the soldier, of his comforts, and that his due shall reach him as much as possible in the normal course. The soldier knows it, and loves Pashkevich with, and if as some enemies of the Prince maintain, he has often made, in his campaigns, strategic blunders, which would have jeopardized his issue, the undoubted devotion of the soldiers has repaired his mistakes, and reestablished on his side the fortune of the battle. Such, it is said, was the case in the campaign of Persia and Poland, under Pashkevich's command.

One pursuing a military almanac of Russia—if any acquainted with the characteristic sounds of the Russian and German languages—will be astonished to find the names of officers, and above all of Generals, to be foreign ones, and most of them Germans. They have crept into the Russian public service, during a long period, to the greatest dissatisfaction of the genuine Russians, by whom they are looked on with hatred, as a national calamity. As this admixture of the German element is not without influence, as well on the internal struggles and collisions of parties as on the councils of the Sovereign and the external action of Russian politics; and further, as the preponderant influx of these foreigners still pours in upon the army—a brief outline of this subject will not be out of order here.

The principal sources of this foreign element are the so-called Baltic provinces, composed of Courland, Livonia and Esthonia. The land-owners or nobility there, as well as the inhabitants of cities, have been Germans for the last four centuries, descending from German knights and other settlers who conquered and civilized these regions, where the aboriginal Cur and Lett, very likely belong to the Finnic stock. The conquerors be-

longed to the brotherhood of the Knights of the Sword, called likewise Knights of St. John of Jerusalem, and also Germans. In the sixteenth century these Knights turned Protestant, married, and divided the land into individual property. They were never really independent, but vassals of Poland, Sweden, and finally, since the last century, they have been subjects of Russia, maintaining still some distinct privileges of caste, and partly the German language, which they call the heart of their distinct nationality. Apart from these born subjects of the Empire, there was, during those hundred years, an influx of adventurers from Germany in every form and with every purpose, from men seeking civil or military service, teachers and artisans, down to servants and the commonest workmen—all of them eager to push their career at the cost of the natives. Numbers succeeded. Thus, for example, one of the greatest favorites of the Emperor Nicholas, Count Kleinmichel, is the son of a footman imported from Germany by the Prince Soltkoff, by whose protection the present Count was placed as a boy in a public military establishment of education. His name, *Little Michel*, bears evidence of his origin. All these Germans born or imported from the principal props of despotism, are the faithful agents of its greatest autocrat. Russia is no father-land to them. They have no love for her. The only tie between them and her is the most abject devotion to the master whom they serve. No interest is felt by them in the moral welfare of the country, and less now than ever, as they hate more and more the old regime, by whom, as civilization and culture extend, these strangers are pushed in the background, and whose efforts become stronger and stronger to get rid of their influence. Generally without any roots in the national element, standing in opposition and hostility to it, their existence depends wholly on the Czars, and to imperial whims they are devoted soul and body. This is one of the reasons for the protection which is bestowed on them by the Emperors. Thus Germans are spread every where; at the Court, in diplomacy, in military service. The guards are full of them. They support patiently, yet cheerfully—the iron discipline, before which the Russian nobility retire more and more. They are even the principal contrivers and executors of it. Their earling exactitude in all the smallest and most annoying details of the service is proverbial—in direct opposition with the rather indolent manner in which generally the Russian looks on like small affairs. As the national proverb says: "Until there is no thunder the Russian makes no sign of the cross," which signifies that he takes himself to work thoroughly only in government emergencies. All the above mentioned qualities of the Germans contribute to secure to them the favor of the rulers. But this is not all. German blood flows rather exclusively in the imperial family. With the Empress Elizabeth, daughter of Peter the Great, pure Russian blood became extinct on the throne. The admixture of the German became more and more copious by each accession—and now it can be said that there is scarcely a drop of that of the Romanoffs—founders of this dynasty in its veins. Peter the III, successor and nephew of Elizabeth, was the son of a prince of Holstein-Gottorp, and Catherine his wife, an Anhalt. Their son Paul the Ist, was thus almost wholly German by descent. From his marriage with a Princess from the house of Württemberg, issues the present Sovereign, united to a Prussian Princess, as his son and heir to one from the house of Hesse Darmstadt. Thus Germans have been grafted on Germany already for four generations, and the pure Slavic element is wholly destroyed, absorbed. If the males by birth become naturalized, Russianized in some way or other the women, continually fresh imported from Germany, prefer very naturally to be surrounded by countrymen. Thus these find access to the court, keep up the interests of their kindred; under their patronage Germans prosper in all the directions—and Russian cannot only become cleansed of them. The German explanation of their preponderance and utility runs thus: they maintain they have civilized Russia, have contributed preeminently, say exclusively according to their version, to secure her greatness since the reign of Peter the Great. But this is a fallacy. The eminent individuals at that epoch, statesmen or military, were the Menchikovs, Sheremetevs, Shuvalovs, Golovins, Kourakins, Dolgorouckis, etc. During the brilliant reign of Catherine II, no German was specially preeminent, and one of her crowning merits in the mind and in the heart of every Russian, that notwithstanding she was a German by birth, one of her countrymen was either her lover, favorite or councillor. In general in all the great emergencies of the Empire, Russians not Germans have rendered the greatest and most services. Peter John Romantoff, Koutousoff, Pashkevich and above all, the invincible Soutavoff, who never lost a single battle,—far outshine Menchikov, Dolgorouck, Baryatinsky, and others of Russian stock, reestablished affairs there on a better footing. As an illustration how old the Russo-Germans were looked upon by the Russians, the following occurrence may serve: At the battle of Cohn, in 1813, when General Vandamme was taken prisoner, the Russian Guards, commanded by Termoloff, contributed principally to the victory. When after the war was over, the King of Prussia and the Emperor Alexander came on the field, Alexander clasped his General, assuring him that in his gratitude he should be most happy to receive any desire or demand of his: "Nak me a German in your service," *Sire*, answered Termoloff, who also belongs to the most eminent men in Russia, and is still looked by a great part of the nation, principally in Moscow, being of genuine Russian stamp.

The characteristic features of the Russian army are those proper to the general character of the Slav and the Russians in particular. An indomitable stubbornness, unbroken toughness, and perseverance and endurance almost beyond human limits, are the prominent qualities. A Russian never gives up any work whatever, when once commenced. To attain the proposed aim he will without hesitation, overcome any difficulties. The work impossible is nearly unknown to the Russian—workman, artisan or soldier. Thus if any new or difficult piece of workmanship is shown to an artisan, and the question asked if he will be able to produce something like it, his ready answer will be, *I don't know, but I will try*. In the same manner, the soldier on a battle field never supposes the any thing there is impossible. He storms batteries with coolness, nay, even contempt, and will stand quite unmoved the most deadly fire of the enemy. He has not, perhaps, the flaming vivacity of the Frenchman or of the Pole, but a peculiar, steady, unbroken will of his own. If overpowered and broken by the enemy, he does not fly in disorder from the field, but remains on it, even with the certainty of the loss of his. During the retreat of the Russian army in 1812 from the Niemen to Moscow for several hundred miles, few, very few, practitioners were made by the French. At the battles of Eylau, Austerlitz, and Molokai, Napoleon was puzzled and terrified by the inflexible obstinacy, especially of the Russian infantry, and proclaimed it to be among the best in the world. About ten centuries ago, Leo Diakonos an Imperial historiographer of Byzantium, speaking of the Rse, of that time, (now Russians) who several times approached the Eastern Capital, says that the *Rse* did not run away. Others maintain this to be the result of a stern discipline. That discipline may contribute to it in a certain degree cannot be doubted—but no discipline can stand against fear.

Whatever may be the external appearance, the spirit among the army and principally among the officers, does not consist in an absolute worship of despotism, as is rather generally believed. An uninterrupted breath of liberal aspirations is active there. Most of the officers feel deeply the iron yoke of despotism crushing them and the country. The number of fanatics and idolaters of Czarism, at any price, is rather a minority, and the bulk would willingly assist in getting rid of it. The conspiracy of 1821, and above all that of 1835, were initiated by the army and most extensively spread in it. In 1835 and 1836 more than two hundred officers of one single corps were engaged in a conspiracy. It was discovered, and a number of the officers punished, but the affair was hushed up. Who knows, whether the present warlike

and quarrelsome attitude taken by the Emperor in the Turkish question, is not a necessity forced on him by some vast conspiracy or uneasiness in the army, which must thus be kept busy some way or other, and its energy directed or expended in some other channel? A war with the Turks always has a more national character than any other war whatever, and is exceedingly well calculated to kindle intensely the religious as well as the Pan-Slavic ardor of the nation and of the army, and thus to curb and subside its disquiet spirit. Such reasons constituted eminently to the war of 1828.

Officers quartered and dislocated in the country are in immediate and continual contact with the nation, the people, and can clearly see where resides the source of the evil. With this, the reading of liberal books when they can get them, forms their greatest relief. They crave for the forbidden fruit, and as far as possible, they try to satisfy this craving. Further, they generally are not at all pleased with the part forced on them, of being the props and knight-errants of despotism in other European countries, of being the earthly pillars of light and the oasis of civilization. The feeling of a genuine Pan-Slavism, aiming at an internal disestablishment of the father-land, is more generally alive and spread among them, than is agreeable to the Czar. This Pan-Slavism is for beginning the work at home, previous to attracting and aggregating the smaller kindred Slavic bodies. The existence of a liberal spirit among the Russian officers, was strikingly evinced during the late Hungarian war. Notwithstanding the Magyar showed themselves as deadly enemies of the Slavic element and independent nationality, as the Austrians and Germans could have been, still, as their cause was tainted with liberalism, the Russian officers never missed an occasion to show their partiality for the cause against which they were fighting, and their most decided contempt for the Austrians. They never met socially, never fraternized with these allies. No Austrian officer could show his face among the Russians, under the penalty of being not only kicked out from any place of public resort frequented by them. This took place continually during the campaign, and it was even rumored that sometimes, on the battle fields, the Russians, drawn up in line away from the Austrians, fired, for the sake of fun, whole volleys into them instead of against the Magyars.

The Russian officers would willingly wish to become the means, even the promoters, of a political—say, even of a social, internal emancipation. But they cannot otherwise combine together into unity of purpose and of action, nor even communicate together in large numbers, without running the greatest personal dangers. They are watched over, surrounded by spies, and any attempt on their part will always be thwarted by the treachery of some individual among them, or wrecked against the impossibility of acting united. The dawn of emancipation will not rise in those quarters, but its rising may be accelerated and facilitated through their interference. When that blessed hour appears on the dial of time, their duty will be—and may already understand it so—to oppose the rising of the peasants, of the people as large: not to quench, but to extend the action of the purifying fire.

The most conspicuous mark of the Russian army in general—that of the officers as well as of the soldiers—is, that they never consider themselves as any exercise in the nation, distinct or superior to the bulk of the people. They do not look on the quality of a citizen as something below them; quite the contrary. This is in itself a mighty pledge for the future. Officers and soldiers both, anxiously look for the moment when they can get rid of the thralldom of the red collar, and return to private life, as citizens or laborers. Officers, if they cannot help themselves otherwise, prefer to change the military or the civil service. They do not share the mean and contemptible notion of the officers of other European armies, as, for example, the Prussians, French, etc., that the red collar and military coat is something superior in position and honor to the common existence of the rest of the nation. We mean by the above, principally officers of pure Russian blood. They know themselves as well as those of other armies, to be the trustees of what is called falsely the national honor, but this feeling is intimately blended in them with the love of country, of which for many of them the Czar is not the personification but only a temporary and transient particle. When the time will come, this distinction between Czarism and the fatherland will become more clear and prominent, and then despotism will stand powerless and abandoned by the majority. Sustained now by cowardly conservatives of both hemispheres, its much-admired discipline will then be of no avail.

If the officers thus preserve the feeling of citizenship, much more is it the case with common soldiers. More miserable, more oppressed by the drill, the discipline, and crushed by it, living in poverty and destitution, their position is far more helpless than would be that of a serf under the most restless master. For the soldier the long years of service are but a daily, nay hourly, *enervement*. Thus nothing separates him from the destiny of the peasant, of the serf. He remains always the serf's brother, and both, however, in a different way, bear on their necks the heavy pressure of caste and despotism. And the change is not for the better for the soldier. His feelings remain exclusively with the people. Thus even when brought into foreign countries, the Russian soldier is the least unreasonable in his claims, the easiest to be satisfied, and if he remains for even a short time in the same place, he identifies himself instantly with the poorest classes among whom he dwells. During the occupation of France after the battle of Waterloo, the difference between the good-natured kindness of the Russian and the particularly arrogant manner of the Prussian or the English soldiers was felt by the French. The Russian was easily satisfied with the commonest fare shared with the host, whereas before he also shared sometimes in the fields, but most generally about the house. Often it happened, that mothers going to work in the fields, left the house, the children and nursing under the care of the northern barbarian, who turned a faithful and careful nurse.

At home the soldier is soul and body the brother of the peasant. In the military service, the pressure of caste weighs upon him more strongly than in his former state. The common soldier never will be does not carry in his knapsack "the marks of the staff," as the military French proverb says since the great revolution. Nay, he does not even carry in it the simple epaulet of a second lieutenant. No bright horizon opens before him in becoming soldier, except an exuberant number of corporal punishments. As a soldier he is hourly reminded that he belongs to the oppressed, and the line between them is not broken. Having common misfortunes, he shares their hopes for a better, if even a distant future. Thus their mutual desire is inseparable.

From this brief but true outline of the characteristics of the Russian army, of its officers as well as of its soldiers it can be conceived that in relation to internal questions the army has a wholly different bearing from that generally attributed to it out of Russia. In the eventuality of a rise of peasants, burghers, or serfs, the army will not so easily become a tool for despotism as those of some other countries have proved themselves to be. With the exception of a party of guards quartered in St. Petersburg, and mostly in barracks, and where the relations between the inhabitants and the soldiers cannot be of the same confidential nature as are those in the country, there is little doubt on what side the soldier will be found in case of any general insurrection. Neither the Emperor, his Councilors nor the nobility at large have any doubt about it. And the more distant comparatively that moment may be, the more assured is the cooperation of the soldier with the people, for in the same proportion the anti-Czarism spirit of the officers will increase or extend. Each successive generation becomes more and more saturated with healthy opinions and discerning love of the fatherland. Thus despotism as well as the privileges of caste, become more and more undermined. Even in these latter years there have been cases where the soldiers refused to fire against partially revolted serfs. From their consciences they could not condemn them, and they could not become murderers. And further, every time when the officers and soldiers come in contact with Europe, they bring home notions not at all congenial to despotism and to the social relations existing there. They become infected with poison, the officer, like the greater part of the nobility, wishes for

the live animal, and say if he has seen anything more truthful. In this particular, it resembles the despotism—in that it copies nature, and has very brilliant ideas held up to view. The head of Wellington and a copy of the Cellini vase, both in copper, are well executed. These, and various other articles of vertu, will well repay the time spent in their inspection. The patent for Electro-Plating and Gilding was granted to the Messrs. Elkington, in 1840. From that time to the present, the articles they produced progressed until it is manufacture of these articles has become a sort of a new industrial business; the number of hands employed by that firm approaches 1,000, and among these are some skilled designers. The process is made use of in France and other countries of Europe, besides its extended use in England by very many other firms who have purchased the right from Messrs. E. and articles of Electro-plate, or those coated with silver, are rapidly superseding in use the old style of manufacture, or what is termed Sheffield plate.

Among the silver articles of electrotype, is a dish, an electrotype reproduction of a plate of fine workmanship obtained and copied for the Messrs. Elkington, under the direction of Chevalier de Schlick. Eight subjects in his relief, represent Minerva, Geometry, Arithmetic, Astrology, Music, and Rhetoric. The central figure represents Temperance surrounded by the four Elements. Under the chess case is a most rich, in the antique style, with Gray's registered gray wall attached. This has the merit of separating the melted fat of roast or boiled meat from the gravy, and thus rendering the gravy as it flows from the meat, as pure as if the fat had been lifted off it, while both were in a solid state. Among the large silver articles, is a center piece for eight lights, in the style of the XV. century, (Italian), with figures supporting basins for fruit; also, a large candelabra with three tiers of arms, in the shape of a basket, midway, and surmounted by a dolphin. This is a massive and beautiful work of art; besides these are four table pieces, representing English scenes. The same case exhibits three pieces for fruit of the Arum pattern.

## THE EXHIBITION AT THE CRYSTAL PALACE.

## VIII. PORCELAIN—ELECTROTYPE ARTICLES.

In the French Department, on the ground floor, is the fine collection of Porcelain and Glass of Labache of the Palais Royal, Paris. As the French National Collection of Serres has not yet been opened, the display of Labache will allow the admirer of good and antique porcelain an opportunity of seeing several articles from that Government Manufacture. The specimens of clocks, lamps and candelabras in Porcelain are without a rival in the Exhibition. There is a Porcelain Salver, gilt and painted with the likeness of Henry IV. and the notabilities of his family down to the present Count Chambord. This is very beautifully executed. There is also a very fine center table piece arranged for lamp and candle for parlor or hall; various designs of lamps and candelabras; a very pretty clock and lamp in which the hours are arranged on the edge of a turning table. In the article of ornamental lamps of Porcelain ware, the collection of Labache excels; besides vases and the articles described, there is a rich modern Tea Service in colored Porcelain; a Dinner Service of white, green and gold; and a Fruit and Flower Service of fine taste and execution. It is in these latter particulars that this collection is worth the visitor's attention. Labache is an artist rather than a manufacturer. He designs patterns and ornaments in his atelier at Paris, applies them to white porcelain ware fabricated at Sevres or elsewhere; and for his excellence in this department, he has obtained not only a Council medal from the London Exhibition, but distinctions from Czarism of France and other European nations.

The porcelain exhibited here is of the hard kind, or that which has been subjected to more intense heat than the English ware, and has not the fusible bone admixture. Such is the Sevres ware of the last 50 years. The difficulties which attend the manufacture of colored and ornamental porcelain are very great. The various combinations of metallic oxides, some volatile, and others not; the proper execution of the necessary heat, the careful selection of fluxes suitable to the ornamental ware, all require the labors of the chemist and the skill of the workmen to go hand in hand to produce a beautiful result. The successful attempts to imitate nature, the formation of gems and artificial stones of the same beauty and value, and as there presented by the hands of time and terrestrial heat operating on rude clays, is almost monopolized at the present day by Ebelman, the Director at Sevres, and it is to the manufacture of French porcelain we are indebted for the explanation and imitation of nature's chemical operations. This has in turn related on the manufacture of the ware, and the inspection of the jeweled porcelain of Labache will satisfy the connoisseur of the beauty and reality of the imitation. The turquoise on the bowls and salvers have all the appearance and hardness of the real gem. Much no doubt is due to individual enterprise in earthenware manufacture, yet still it must be borne in mind that the French Government factories are the source of the excellence of the crude article, the beauty of design and the artistic character of the coloring, and that the progress of England and other nations in porcelain is in imitation of the French productions. Labache's collection of old Sevres and modern imitations will make clear to even the uninitiated observer.

In the Austrian and German department the collection of porcelain ware is not fully exposed, and a notice of them is therefore delayed; they will be covered by the progress of the exhibition. Of the common ware along with the better, there is a moderate exhibition. In the Canada department there is a collection of Quebec pottery, made of good clay, but the finish is rather defective.

The Messrs. Mayers, of Dalehall pottery, Staffordshire, have some very good specimens of opaque porcelain. The opacity is caused by the clay being so thick that the fusible compound which will be colored in the kiln. This occurs with the soft porcelain; with the hard a single firing of a higher temperature is used. The opaque glaze has generally a base of oxide of tin, and sometimes phosphate of lime when a white tint is required, when it is needed colored, oxides of manganese, copper, iron and cobalt are mixed in. The Messrs. Mayers have a fine collection of earthen figures, and stone jugs and pitchers in his list of extremely pretty patterns.

In connection with these remarks on ornamental work, we may here introduce to notice the collection of Messrs. Elkington & Mason, in the British department, up stairs. The contributions from this eminent English firm consist of one table covered with electrotyped articles in copper, brass and silver. The collection is so arranged that the eye is attracted more attention than the expensiveness of gold and silver beside it. This beautiful art (electrotyping) belongs to our day—although as far back as 1801 Dr. Wollaston observed that if a piece of silver, in connection with a more positive metal, be placed in a copper solution, the silver is coated over with the copper, which coating will bear rubbing with the burisher. Notwithstanding this ancient discovery, the electrotype process was not applied to the manufacture of articles until 1838, when Professor Daniel of London, invented his constant battery. The London Exhibition announced that Jacob, of St. Petersburg, could convert any line, however fine, engraved on a good collection of fine-finished bas-reliefs for electrotyping metal surfaces with copper. It was subsequently found that a resinous coating protected parts which it was desired not to coat over, thus facilitating the easy removal of casts; and Murray found that pumice gave any surface a coating similar to a metal, and enabled the deposit to be thrown down upon it. This removed the necessity of using chemicals, and allowed the employment of water, resin, and acid. The metallic solution are all that is required for this multipurpose art. The article to be coated or the mold is placed in the metallic solution, and put in connection with the wires from the battery. The deposit of metal immediately commences, and goes on until the whole metal of the solution is thrown down upon the mold, and if precautions be taken to keep up its strength, the deposit of metal may go on ad infinitum. Thus any amount of thickness of metal coating may be laid on, and in proportion to the nature of the metallic solution will be the metal deposited. Thus, when the solution is of copper it is copper which is deposited; when of silver it is silver; a gold solution is used for depositing gold. The copies which are thus produced are faithful and accurate to a fault. Every even the minutest line is represented; the metal may go on ad infinitum. Thus any amount of thickness of metal coating may be laid on, and in proportion to the nature of the metallic solution will be the metal deposited. Thus, when the solution is of copper it is copper which is deposited; when of silver it is silver; a gold solution is used for depositing gold. 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